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REMARKS

The Office Action of September 11, 2007 has been received and carefully reviewed. It is submitted that, by this Amendment, all bases of rejection are traversed and overcome. Upon entry of this Amendment, claims 1, 2 and 4-24 remain in the application. Claim 3 is cancelled herein. New claim 25 has been added in order to set forth an additional specific embodiment that Applicants regard as their invention. Support for new claim 25 can be found throughout the specification as filed, at least in the table set forth on page 14, and in the claims. Reconsideration of the claims is respectfully requested.

Claims 1-24 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claim 1 recites that the ink comprises about 0.1 to 5% by weight of water-soluble polyurethane having a water-solubility limit of at least 0.1%, and further recites that the polyurethane is fully dissolved. The Examiner contends, however, that the scope of claim 1 is confusing because if the ink includes 5% of a water-soluble polyurethane with a water-solubility limit of 0.1%, it is unclear (according to the Examiner) how the water-soluble polyurethane is fully dissolved. The Examiner suggests amending claim 1 to recite, "water-solubility limit of the water-soluble polyurethane is greater than about 5% at 25°C" (i.e., the limitation set forth in dependent claim 3).

The Applicants respectfully disagree with the Examiner's conclusion that claim 1 fails to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claim 1 specifically states that the "amount of water-soluble polyurethane present in the ink composition is fully dissolved." As such, it is submitted that the scope of claim 1 covers those amounts of polyurethane and those solubility limits which enable the water-soluble polymer to be **fully dissolved**. Clearly, one skilled in the art would recognize that the example set forth by the Examiner would *not* fall within the scope of claim 1, as the water-soluble polyurethane would not be fully dissolved. Since the claim sets forth that the water-soluble polyurethane is fully

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dissolved, it is submitted that one skilled in the art would recognize that the solubility limit and amount are selected to fulfill this additional limitation. As such, Applicants submit that the 35 U.S.C. § 112, second paragraph, rejection is erroneously based, and withdrawal of the same is respectfully requested.

Claims 1-3, 6-10 and 17-21 stand rejected under 35 U.S.C. § 102(a) as being anticipated by WO 03/097753 (the equivalent of which is Waki, et al. (U.S. Patent Publication No. 2004/0242726)). The Examiner states that Waki teaches all of the elements of Applicants' independent claim 1.

Waki discloses an aqueous pigment **dispersion** including a pigment and **two different resins**: a water-soluble resin used as a dispersant and a resin having an amide bond and/or a urethane bond (e.g., a polyurethane resin). (See Abstract and paragraphs [0013], [0034], and [0056].) The resin including the amide bond and/or the urethane bond is used as a second resin **in addition** to the water-soluble resin (i.e., the first resin) (see paragraph [0056]).

To achieve an ink having a high permeability and quick drying property (see paragraphs [0009]-[0010]), Waki discloses combining the pigment dispersion with conventionally known methods for increasing the permeability of an ink. In an embodiment, the pigment dispersion may be combined with a 1,2-alkanediol (as disclosed in JP-A-2002-30,237), such as 1,2-C₁C₈ alkanediol. Thus, Waki discloses an ink composition having a high permeability, where the ink composition includes a pigment, a water-soluble resin, a resin having an amide and/or a urethane bond, **and** a 1,2-alkanediol.

Applicants' claim 1 has been amended to recite, in part, "from about 0.1 to 5% by weight of **only one resin, the only one resin** being a water-soluble polyurethane..." (emphasis added). Support for this recitation may be found throughout the specification as filed, at least at page 2, line 28, page 3, line 12 through page 8, line 2.

Amended claim 1 includes only one resin (a fully dissolved water-soluble polyurethane), a 1,2-alkyldiol, and a pigment. This is in sharp contrast to Waki, which includes two resins. As such, it is submitted that the invention as defined in Applicants'

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claim 1, and in those claims depending ultimately therefrom, is not anticipated, taught, or rendered obvious by Waki, either alone or in combination, and patentably defines over the art of record.

Claims 5 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Waki. For the reasons provided above, it is submitted that Waki fails to establish all of the elements of independent claim 1, from which claims 5 and 24 depend. As such, Applicants' invention as defined in claims 5 and 24, through its dependency from claim 1, is not anticipated, taught, or rendered obvious by Waki, either alone or in combination, and patentably defines over the art of record.

Claims 11 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Waki in view of Iu, et al. (U.S. Patent No. 6,102,998). For the reasons provided above, it is submitted that Waki fails to establish all of the elements of independent claim 1, from which claims 11 and 12 ultimately depend, and that Iu fails to supply the deficiency thereof. As such, it is submitted that Applicants' invention as defined in claims 11 and 12, through its dependency from claim 1, is also not anticipated, taught, or rendered obvious by Waki and Iu, either alone or in combination, and patentably defines over the art of record.

Claims 13 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Waki in view of Ma, et al. (U.S. Patent No. 5,648,405). For the foregoing reasons, it is submitted that Waki fails to establish all of the elements of independent claim 1, from which claims 13 and 14 depend, and that Ma fails to supply the deficiency thereof.

Furthermore, it is submitted that one skilled in the art would **not** be led (contrary to the suggestion of the Examiner) to combine the ink composition of Waki with the surface tension of Ma. The two compositions are entirely different – Waki teaches an aqueous pigment dispersion including a pigment and **two** different resins: a water-soluble resin used as a dispersant and a resin having an amide bond and/or a urethane bond; and Ma teaches an ink composition including a colorant and a vehicle having a *polyampholyte* containing at least one carboxylic acid group and at least one amine group. It is submitted that one skilled in the art would not likely conclude that the

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surface tension of Ma is suitable for the ink of Waki, in part because the compositions are so different. Applicants submit that the fact that the references relate to entirely different ink compositions supports the submission that one skilled in the art would not be led to combine the references in the manner set forth by the Examiner.

For all of these reasons, it is submitted that Applicants' invention as defined in claims 13 and 14, which depend from independent claim 1, is not anticipated, taught, or rendered obvious by Waki and Ma, either alone or in combination, and patentably defines over the art of record.

Claims 15 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Waki in view of Elwakil (U.S. Patent No. 5,833,743). For the reasons submitted above in connection with independent claim 1, Applicants submit that Waki fails to teach all of the elements of claim 1, and that Elwakil fails to supply the deficiency thereof. As such, it is submitted that Applicants' invention as defined in claims 15 and 16 is not anticipated, taught, or rendered obvious by Waki and Elwakil, either alone or in combination, and patentably defines over the art of record.

Claims 1-10 and 17-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirasa, et al. (U.S. Publication No. 2002/0019458) in view of Hayashi (U.S. Patent No. 6,500,248). The Examiner states that Hirasa discloses all of the elements of independent claim 1 except for a 1,2-alkyldiol. The Examiner, however, relies upon Hayashi to supply this deficiency. The Examiner concludes that it would have been obvious to one of ordinary skill in the art to use 1,2-alkyldiol in the ink of Hirasa in order to produce an ink with improved color development that does not exhibit feathering or bleeding, thereby arriving at the claimed invention.

As previously stated, Applicants' amended claim 1 recites, in part, "**from about 0.1 to 5% by weight of only one resin**, the only one resin being a water-soluble polyurethane..." (emphasis added).

In sharp contrast, Hirasa discloses a recording liquid including a polymer (b), "which has at least one type of bond selected from the group consisting of amide bond, urethane bond and urea bond in the molecule...is used in an amount of usually 5 to

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200% by weight, preferably 8 to 100% by weight, more preferably 8 to 70% by weight, **based on the weight of polymer (a)** (emphasis added). Substance "(a)" of Hirasa is a pigment, and thus, it is submitted that Hirasa is teaching that the amount of the polymer (b) is based on the weight of **pigment (a)**. The Examiner asserts that the amount of water-soluble polyurethane **in the ink composition** falls within the range recited by Hirasa. Applicants submit, however, that the amount of polymer recited in Hirasa is based on the weight of the pigment, not on the overall weight of the recording liquid. Applicants therefore submit that the amount of polymer provided in Hirasa **does not** fall within Applicants' claimed range.

Furthermore, the urethane resin disclosed in Hayashi is present in the ink composition as an **emulsion** in the presence of glycerin and other surfactants. As such, the urethane resin is **not fully dissolved** (if the urethane resin were fully dissolved, e.g., surfactants would generally not be necessary). Accordingly, Hayashi teaches that a 1,2-alkanediol may be combined with a non-dissolved or perhaps a semi-dissolved urethane resin. However Hayashi does not disclose, suggest, or even imply that the 1,2-alkanediol may be combined with a **fully** dissolved urethane resin in order to achieve the desired results (provided above). Thus, it is submitted that a skilled artisan would not be led to combine the teachings of Hayashi with those of Hirasa to produce an ink composition having a 1,2-alkanediol (or 1,2-alkyldiol) combined with a **fully dissolved** polyurethane (as recited in amended claim 1).

For all of these reasons, it is submitted that Applicants' invention as defined in claim 1, and in those claims depending ultimately therefrom, is not anticipated, taught or rendered obvious by Hirasa and Hayashi, either alone or in combination, and patentably defines over the art of record.

Claims 11 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirasa in view of Hayashi, and further in view of lu. Claims 13 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirasa in view of Hayashi, and further in view of Ma. Further, claims 15 and 16 stand rejected under 35

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U.S.C. § 103(a) as being unpatentable over Hirasa in view of Hayashi, and further in view of Elwakil.

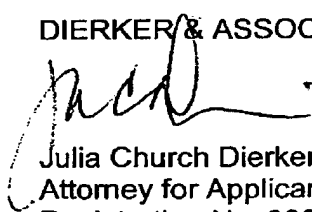
For all of the reasons provided above, it is submitted that the combination of Hirasa and Hayashi does not render obvious Applicants' amended claim 1. It is further submitted that none of the other references (Iu, Ma, or Elwakil) supply the deficiencies of Hirasa and Hyashi. Thus, Applicants submit that claims 11-16 are also patentable based on their dependency from claim 1. As such, it is submitted that Applicants' invention as defined in claims 11-16 is not anticipated, taught, or rendered obvious by Hirasa and Hayashi, either alone or in combination with Iu, Ma or Elwakil, and patentably defines over the art of record.

In summary, claims 1, 2 and 4-24 remain in the application, and new claim 25 has been added herein. It is submitted that, through this Amendment, Applicants' invention as set forth in these claims is now in a condition suitable for allowance.

Further and favorable consideration is requested. If the Examiner believes it would expedite prosecution of the above-identified application, the Examiner is cordially invited to contact Applicants' Attorney at the below-listed telephone number.

Respectfully submitted,

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